

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): ~~Heat~~ A heat integrated distillation column comprising a cylindrical outer shell having an upper and a lower end and at least one first inner volume and at least one second inner volume in the shell, and being in heat exchanging contact with each other through a wall separating the volumes, the improvement comprising providing means having heat exchanging capacity extending through the said wall from said at least one first volume into said at least one second volume, whereby the inside of the said heat exchanging means is in open fluid connection with the said first volume.

Claim 2 (currently amended): ~~Column~~ The heat integrated distillation column according to claim 1, wherein the said column is provided with an inner tube which is concentric with the outer shell, thereby defining a volume inside the inner tube and an annular volume between inner tube and outer shell.

Claim 3 (currently amended): ~~Column~~ The heat integrated distillation column according to claim 1, wherein the said first and said second volume have been created by separating wall extending along the inside of the outer shell, and connected at both ends to the outer wall.

Claim 4 (currently amended): ~~Column~~ The heat integrated distillation column according to claims 1-3, wherein said first volume is constructed to act as stripping section and said second volume as enriching section.

Claim 5 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~claims 1-4~~ claim 1, wherein the heat exchange means are present in the

volume that has been designed as the volume with the highest temperature and is in open connection with the volume designed to have the lowest temperature.

Claim 6 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~claims 1-4~~ claim 1, wherein the heat exchange means are present in the volume that has been designed as the volume with the lowest temperature and is in open connection with the volume designed to have the highest temperature.

Claim 7 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~claims 1-6~~ claim 1, wherein vapour disengagement means are present; preferably selected from the group of fins, vanes, corrugated structured packing sheet and dumped packing rings.

Claim 8 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~claims 1-7~~ claim 1, wherein the both volumes are provided with trays and downcomers.

Claim 9 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~claims 1-7~~ claim 1, wherein the enriching section is provided with trays and downcomers and the stripping section is provided with structured or random packing.

Claim 10 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~claims 1-7~~ claim 1, wherein the stripping section is provided with trays and downcomers and the enriching section is provided with structured or random packing.

Claim 11 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~claims 1-7~~ claim 1, wherein both the stripping section and the enriching section have been provided with a structured and/or a random packing.

Claim 12 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~anyone of the claims 1-11~~ claim 1, wherein the said heat exchange means comprise a panel or a tubular construction, preferably corrugated sheets oriented in

~~vertical direction, coils, flat plates, dimple plates or tubes, finned plates or tubes or other plates or tubes that enhance heat transfer.~~

Claim 13 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~claims 1-12~~ claim 1, wherein a plurality of said means having heat exchanging capacity is present along the length of the column.

Claim 14 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~claims 1-13~~ claim 1, wherein the said means having heat exchanging capacity are located in the downcomer of a tray.

Claim 15 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~claims 1-14~~ claim 1, wherein the heat exchange means are located between the trays.

Claim 16 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~claims 1-15~~ claim 1, wherein the volume of one section increases from the lower end to the upper end and the volume of the other section simultaneously decreases from the lower end to the upper end.

Claim 17 (currently amended): ~~Column~~ The heat integrated distillation column according to ~~claims 1-16~~ claim 1, wherein means are present for providing a pressure difference between the said first volume and the said second volume.

Claim 18 (currently amended): ~~Process~~ A process for distilling liquefied air, an organic mixture[[s]], or an aqueous mixture[[s]], said process comprising ~~applying~~ distilling liquified air, an organic mixture or an aqueous mixture using a column according to ~~claims 1-17~~ claim 1.

Claim 19 (currently amended): ~~Use of a column according to claims 1-17, for distillation:~~ The heat integrated distillation column according to claim 7, wherein said

disengagement means are selected from the group consisting of fins, vanes, corrugated structured packing sheet and dumped packing rings.

Claim 20 (new): The heat integrated distillation column according to claim 1, wherein said heat exchange means comprises corrugated sheets oriented vertically, a coil, a flat or dimpled plate, a dimpled tube, a finned-tube, or a finned-plate.